CSC Change Control Process Overview

To ensure that changes are introduced into the environment with minimal risk, changes are categorized into four types. The process for each type of change is described below.

1) Dynamic Changes
2) Normal Changes
3) Alert Changes
4) Emergency Changes

The change process applies to all environments (development, testing, stage and production). All changes require a change request form and the latest version is attached.

1) Dynamic Change Definition

Dynamic changes represent the lowest level of risk. These requests require the smallest amount of planning and testing because they will not cause an outage or negative impact and can be "backed out" during hours of operation without affecting availability. Dynamic changes can be implemented any time. Examples of Dynamic changes can be found in the attached document, GIS CM Process, Appendix D and include all changes in the development, testing, and stage environments.

Dynamic Change Requirements

1. Require a change request and approval.
2. Must be submitted in writing to the CSC Line of Service (LOS) Manager 24 hours prior to the scheduled change.
3. The appropriate LOS manager will provide approval via email before the scheduled change.

   Dave Hugh, Networks, 203-317-5006, dhugh@csc.com

   Dave Barber, Unix, 203-317-4899, dbarber7@csc.com

   Larry Hale, NT, 203-317-4821, lhale3@csc.com

   Carol Greer, Mainframe, 860-513-5860, cgreer@csc.com

The list of Dynamic changes is evolving. If there are changes that could possibly fall into this category and are not listed, please forward a description of the change to the LOS Managers for consideration. If the LOS manager agrees that the change qualifies as dynamic, the change will be forwarded to the CCB for final review and approval. If approved, it will be added the list of dynamic changes.

2) Normal Change Definition

Normal changes represent a higher risk to the environment. These requests require additional planning, testing, a backout plan, and criteria for success for both the change and the backout. Normal changes are implemented during the scheduled maintenance window. Normal changes may cause an outage or impact to the environment.

Normal Change Requirements

1. Require a change request and approval.
2. Must be submitted in writing to the appropriate LOS Manager 7, 14 or 21 calendar days prior to the schedule changed depending upon the level of risk the change represents.
   - Low Risk - 7 calendar days
   - Medium Risk - 14 calendar days
   - High - 21 calendar days

If you do not know the appropriate LOS Manager send change to Service Delivery Manager.

Gary Adams, 202-842-8614, gadams2@csc.com

Jack Gillotti, 203-317-4816, jgillott@csc.com
Mike Healy, 202-842-7080, mhealy1@csc,com
David Lass, 203-317-5037, dlass@csc.com

3. The appropriate LOS manager will provide written approval via email before the scheduled change is implemented.
4. CSC must submit all changes by 12:00 pm Wednesday for consideration at the weekly Change Control Review Board (CCRB) meeting.
5. Risk is determined by the requestor and confirmed by the LOS Manager using the chart below. Rate each risk type and total the associated numeric scores. The higher the score the lower the risk. Select the risk level based on the total score:
   - if the sum is 4 to 8, Risk is "High".
   - if the sum is 9 to 13 Risks is "Medium".
   - if the sum is 14 to 16, Risk is "Low".

Use the Risk Assessment Matrix below to determine level of risk.

Risk Assessment Matrix:

Risk Type	Numeric Score				Total
	1	**2**	**3**	**4**	
Dependencies	Change cannot be backed out **or** Validation based on client usage	Complex implementation and/or validation **or** Requires extended change window or Change exceeds 1.5 hrs to implement	Moderate implementation and/or validation	Easily validated and backed out	+
Impact	Affects all Clients **or** Affects all CSC sites **or** Affects all sites for single Client	Exclusive use of entire platform or network **or** Affects multiple platforms/networks **or** Affects multiple systems or Clients	Affects single Client or CSC site **or** Exclusive use of major component **or** Exclusive use of major sub-system	System usable by users during implementation	+
Priority	Service outage causing Client or CSC revenue loss	Service outage - critical component	Service outage - non critical component	No service outage	+
Users Affected	75% or more users affected	50% to 75% of users affected	25% to 50% of users affected	Less than 25% of user affected	+

Risk Assessment Total _____

3) Alert Change Definition
Alert changes support exceptions to the Normal change process for critical business changes. Since these changes typically have a shorter lead team or are implemented outside of the scheduled maintenance windows, they represent a higher risk to the environment than Normal changes. Therefore, these requests require additional planning, testing, a backout plan and criteria for success. CSC will request two things from the FSA CIO. First, FSA CIO must verify

the criticality of the business need. Second, FSA CIO must waive CSC's SLA commitment for the duration of this change and any required backout time. CSC has an SLA obligation during production hours and will not jeopardize the environment without specific written instructions.

Alert Change Requirements

1. Require a change request and approval and must be submitted to the appropriate LOS Manager.
2. Reviewed by the SDM, LOS Manager, Operations Manager for completeness, risk assessment and conflict with other changes.
3. FSA CIO must provide approval and SLA waiver to CSC.
4. Must have the approval (electronic) of the Service Delivery Manager/Customer, the LOS Manager and the Operations Manager.

4) Emergency Change Definition

Emergency changes are implemented to restore service, maintain quality service or to protect personnel equipment and facilities. They are changes necessary to fix a system that is not operating and are generated as part of the Service Restoration process. Emergency changes are always preceded by a call to the Command Center, 203-317-5051, to report a problem and can cause an outage or impact to production. After operation has been restored, a change request is entered into the GCARS system within 48 hours.

Emergency Change Requirements

The SDM and the Data Center Manager, Carolyn Waters, 203-317-4863, cwaters@csc.com, must approve emergency changes.

Modification to changes

CSC will work with the change requester to accommodate minor modification to changes without impacting the original implementation date. However, if a submitted change requires significant modification, the appropriate lead times must be adhered to based on the risk level of the change request and the date of the modification.

Updates to changes:

Updates to development changes should be made in ECM/GCARS as of noon each Monday in preparation for the Tuesday VDC Transition meeting. Updates to production changes should be made in ECM/GCARS as of noon each Wednesday in preparation for the Thursday VDC Production Operations meeting.

Appendix D – Approved Dynamic Change

Automation

- Message suppression
- Routing of and high lighting of WTO console messages.
- Installation of traps for issuing pages.
- Addition, creation and modification of rules, traps, message table entries and operator alerts.
- Creation and modification of Rexx execs, clists and command libraries. Limited to non-system started tasks.
- Modification of configuration files, parms, or conditions settings. Limited to non-system started tasks.
- Addition, removal, modification of URL's.
- TNG DSM discovers, removals or modifications of objects.
- Adding consoles to automation point.

CONFIG

- Esoteric gens
- Configuring Chipids online/offline
- LPAR dynamic weights/capping changes
- Dynamic swapping of Coupling Facility datasets
- Disconnection of Chipids configured off and in service mode
- Changes to performance parameters, includes MVS, sub-system and storage management changes
- Dynamic HCD IODF updates and Activation for OS(gens/esoteric) and CSS(IOCP) info

CSC Internal Services

- ·Creation of servlets for projects for PVCS VMINET on local server.

Database – Oracle Servers

- Changes to non-Production environments – Development, Stage, Business, Integration and Training.
- Changes to Database Instance configuration parameters implemented via initialization file or dynamically. (Examples: database buffer cache, database latches, and other database constructs) Site notification of activity required.
- Changes to database network configuration files. (Examples: Reference new database instances, activate / deactivate logging, etc.)
- Creation of a Database Instance.
- Addition or modification to Database Services scripts. Limited to non-system started tasks.
- Enabling or disabling of diagnostic capabilities. (Tracing, Logging, etc.)
- Changes to the sizing and physical placement of database files, control files, and redo log files with the intent of resolving or preventing system performance degradation.
- Changes to the configuration (number and size) of rollback segments, temporary segments, and table spaces.
- Changes to application schemas, such as the addition of new indexes.

DBMS

- DB2 buffer pool resizing
- Creating DB2 Objects (regions)
- CICS Printer definition Changes
- Changes to test and stage DBMS Regions
- DB2 Modification of the Communication Database
- Adding New CICS Applications or adding new programs, transactions, or maps to existing applications
- Addition, Deletion or Modifications of CICS RDO GROUP configurations
- Addition, Deletion or Modifications of CICS RDO LIST configurations
- Addition, Deletion or Modification of CICS RDO defined resource definitions

EB Site - DDS

- Changing NIS maps and /or DNS/WINS tables
- Loading and/or configuring software on stage or development machines
- Security related vulnerability scanning – limited to site/local
- License file updates/adds/deletes – low risk
- Additions/ modification of systems administration scripts
- Group Security Privileges - Low risk
- File maintenance that does not require the additional or removal of hardware
- Routine tuning and configuration changes to the LSF configuration tables. Limited to adding users or updating queues – not requiring a reboot
- COTS and In-house / ASD software already in the production environment being pushed to 100 or more machines.
- De-install server equipment no longer in use.

Facilities

- Contract cleaning of raised floor on bi-weekly.
- Scheduled maintenance, installation and cleaning of fire and life safety systems.
- Placement or relocation of power cables under raised floor during predefined service window.
- Trace existing hardware power feeds in computer room.

MVS OS

- Message Table changes
- Low risk PROCLIB changes
- Low risk Disk Reader changes
- Adding sessions to Session Managers
- MVS CPU and date password changes
- VPSPRINT and RDS printer definition changes
- Parmlib Members: APF additions, IECIOS, Config, CSVLLA, logonprocs, Commandxx
- Bookmanager (on-line documentation)books and shelves changes
- Making changes to System Config with backup copy
- Online Monitor changes (i.e.; Omegamon/TMON) when CSC is determined to be the only user
- Performance and workload parameter changes (IPS, ICS and WLM parms)
- Dynamic swapping of Coupling Facility datasets
- CA1 PPOPTION datasets for expanding scratch pools.

- Rename/Delete obsolete libraries
- Non ACS SMS changes (no changes to SMS allocation changes)

Midrange – NT

- Updating of Event Log Settings.
- SSL Certificates (Generation & Renewal)
- Manual update of NAV virus definition files.
- Resetting, deleting, purging, copying of log files.
- Product License upgrades on the Rational server.
- Replacement of "Hot-Swappable" drives and power supplies.
- New server builds as long as they already have a network connection.
- Changes to Profiles & Reports on NetIQ/WebTrends Reporting Center.
- Change Arcserve configurations & changes to backup schedule/parameters.
- Create virtual directory on IIS server, Deleting of .tmp files, and FTP'ing files between servers.
- Non-Source Code Web Site content changes, i.e.; changes allowed include but are not limited to "P" messages, Office docs, pdf's, text files, text only HTML, etc. (Source code includes dlls, executables, and controlling HTML files).
- Moving/copying files on servers can only be done from Production to Development servers if less than 1GB via LAN, and 300MB via WAN. To move or copy files onto a Production server requires a normal change.
- Modification of startup, shutdown, and/or reboot scripts/batch files on the Development and/or Staging servers.

Midrange – UNIX

- Define or modify a device.
- Define or modify print queues.
- Changes to automation environment.
- Changes to system administration tools.
- License file adds/updates/deletes – low risk.
- Expanding and Creating new file systems and directories.
- Changes to cronjobs. Limited to non-system, non-intrusive changes.
- Changes to Development and Staging environments. (Non-production as identified in GEMSP)
- Changes to Control Workstation. Limited, no reboot or take down of NFS permitted.
- Populating new directories with data and/or applications. Copies that exceed 300MB on the WAN or 1GB on the LAN must be done during the back-shifts. (i.e.; after 5:00 PM for CAEN or after 2:00 AM for Catia.
- Adding SAN disks to a server. Limited – Not applicable to changes requiring clustering of fail over scripts.
- Taking servers in/out of load-balance configuration. Limited, to be performed off shift, between 1700 and 0700.
- TNG AW service recycling per automation request.
- Process Resource Manager (PRM) configuration changes.
- Add disk space which doesn't require service guard change for VPROD (Production) and disk space that dds to VDEV (development) with service guard change.
- Adds or changes to backup specifications (schedules, start/stop commands and add/delete file systems).

Middleware – MQSeries

- Changes to production environments that are non-intrusive, have no potential to cause an outage or require the MQ subsystem to be re-cycled. (If changes do not take effect until after a system reboot, then testing cannot occur timely and there is no need not to be in maintenance window – startup scripts should be monitored on first issuance so we don't have unintended outages).
- Creation of new MQ objects to support Data Integrator, replacement objects are not considered dynamic.

Middleware – MQSeries Integrator

- Importing MQSI objects such as message flows, message sets, topics, NEON rules and formats.
- (There is an element of risk in doing this activity, CSC recommends against this activity in a production environment).
- Configuring user and/or service trace for MQSI, these changes may affect performance so they need to monitored carefully.
- Installing MQSI support pac (requires unzipping a zip file to the appropriate directory).
- Creating additional MQSI brokers and execution groups.

Middleware – IBM Http Server

- HTML Page deploys, updates or deletes, which do not require restarts.
- Deployment of a new site without restarting the webserver (intended for preparation work prior to go-live of a site) – including WebSphere plugin files (queues, rules, & vhosts)
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- Note: This can negatively affect system reliability and robustness. These changes are best dealt with as emergency or alert changes, as SLAs could be impacted).
- Creating & Implementing SSL certificates to be sent to Verisign

Middleware – Websphere Application Server

- Changes to Development, Test or Stage Servers - This can negatively affect system reliability and robustness and are best dealt with as alert changes, as SLAs could be impacted.
- Adding Virtual Hosts to WebSphere configuration

Middleware – Load Balancing (Network Dispatcher)

- Adding new clusters to Network Dispatcher (ND) that do not require restart of ND
- Setting servers to down to troubleshoot in case of multiple web servers
- Reporting statistics on ND
- Modification to ND services to allow/deny routing of traffic to downstream servers provided they will not impact production systems as a result of the change.

Middleware – Monitoring tools

- Configuration changes to allow production monitoring of new objects, pages, files, datasets and interfaces by middleware monitoring tools .

- Deployment/Removal/Redirection of new monitoring agents for MQSeries, MQSeries Integrator, Application Servers (WebSphere, WebLogic, iPlanet, Oracle), HTTP Servers (IBM HTTP Server, iPlanet, Apache, etc…) which do not require an interruption in applications, server restarts or reboots.

Middleware – Rational ClearCase

- Adding, modifying or removing branch and label types
- Adding new or removing obsolete Version Object dataBases
- Removing outdated views

Network Software

- Adding users, profiles and clists to Netview.
- VPSPRINT and DSR printer definition changes and user ID additions.
- Adds to VTAM, (i.e.; Major nodes, adding new logon options, dynamic paths.)
- TCPIP – Changes to TCP Profile in MVS or VM environments. Limited to adding LU's, changing terminal model types, adding new link adapter.)

Network Engineering Services – Norwich, Meriden and Remote Sites

- New Equipment Installs – Low risk. (Not connected to any network) Norwich limited to installs within existing cabinets.
- Hub and switch installs to expand existing LAN capabilities
- Connecting and bringing up new circuits, modems, CSU/DSU, etc., and testing with Telco. (Non-production).
- Bringing up a new PVC on existing frame relay (not including BAN or backbone)
- Testing dial backup in non-disruptive manner.
- Adding a static route, host address, and access filter to correct a customer problem on all routers.
- Adding or changing a filter for a new interface or protocol (not including BCN or backbone)
- Install twisted pair cable during a predefined service window.
- Switch changes, port activation and/or port bridge group changes for a hub installation, which does not impact anything else on the switch.
- De-install network equipment no longer in use.
- Modifying an existing firewall rule/policy.
- Laying and / or Running Cables for upgrades, additions or new installs in the NCC room.

OPERATIONS

- Add, delete, or change of CA7 users
- Infomgt. Adds, changes and deletes to entry and assisted entry panels. Updates to dictionary and tables

SECURITY

- Group Security Changes
- Low risk started task table changes
- Low risk parameter changes to ACF2, RACF, and Topsecret

STORAGE MANAGEMENT

- Esoteric gens
- Vatlst changes
- SMS Parameter changes
- Adding and deleting of empty DASD volumes
- CA1 PPOPTION datasets for expanding scratch pools
- DSN tables used by HSC exits are updated dynamically
- HSC scratch pool parm changes (scratch pool changes, warning thresholds, etc.)
- Switch HSC exits dynamically to allow us to incorporate changes for special conditions. (not needed very often)
- Adding daily or weekly reporting jobs, including things like turning on Dump Checker.
- Low risk parameter changes to storage management products, such as HSM, DMS, ASM2, FDRABR, and ProSMS
- DASD feature changes. This would include things like duplexing, cache settings, mirroring, and SnapShot changes. Some changes should still go through the full change process, like the first time SnapShot is implemented for full-volume backups.

VM/VSE

- Set active I/O
- Varying Chpids on/off
- Defining and deleting devices
- Defining new RSCS/NJE links
- Changes to VSE CICS Tables.
- Defining new VTAM list members
- Making changes to system Config file with backup copy.
- Defining virtual CTC's and Coupling from one system to another
- Updating and Cycling VM: Manager Products except for VMSecure, which is done as a planned changed during an approved maintenance window.
- Changes to Prop, VMOperator , Netview, RSCS, VTAM, Tubes, EREP, EPIC/CMS, VM:Tape, VM:Backup.